

HANDBOOK OF  
QUALITY ASSURANCE  
FOR THE ANALYTICAL  
CHEMISTRY  
LABORATORY

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# HANDBOOK OF QUALITY ASSURANCE FOR THE ANALYTICAL CHEMISTRY LABORATORY

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**SECOND EDITION**

James P. Dux



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To my wife Catherine  
and our children,  
Ann and Thomas

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# Preface to the Second Edition

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When the first edition of this book was being written, the subject of analytical laboratory quality assurance was just beginning to be a topic of concern to analytical chemists. There was considerable confusion in the analytical laboratory community regarding just what constituted quality control and quality assurance, and what needed to be done in the laboratory to achieve these worthwhile goals. The literature on the subject was fragmented, and often represented a parochial point of view reflecting specific concerns of chemists in specific types of laboratories, working on specific types of materials. There were only a few books on the subject, and these also tended to reflect the backgrounds of the authors.

The intent of the first edition of this book was to attempt to bring some order and general principles to the field, and above all, to emphasize the practical aspects of laboratory management of quality assurance. Judging from comments received from readers, the book succeeded in these objectives reasonably well. However, in today's fast-paced world of science and technology, and in a field as "hot" as quality assurance in analytical chemistry, change is the order of the day. Therefore I was intrigued when the publisher suggested

a second edition might be in order, and readily agreed. Although the basic principles remain the same, discussions with analysts, laboratory supervisors, and managers indicated many areas where improvements could be made.

For example, new chapters have been added on sampling and quality assurance; laboratory facilities and quality assurance; and auditing for quality assurance. Very little of the first edition has been discarded, but many topics have been expanded considerably. The chapter on computers has been completely rewritten in view of the rapid changes in that field. The chapter in the first edition on planning and organizing for quality assurance has been split into two chapters, one on planning for quality assurance and the other on organizing and establishing a quality assurance program, and new material on mandated quality assurance programs has been combined with the material on laboratory accreditation. Numerous examples, especially those involving mathematical calculations, have been added at the suggestion of some readers. In short, this edition is very nearly a new book, and I can only hope it is as well received as the first edition.